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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,268

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Hideo Nagai

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52044

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EXAMINER

PHAM, LONG

ART UNIT

PAPER NUMBER

2814

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,268	<b>Applicant(s)</b> NAGAI, HIDEO	
	<b>Examiner</b> Long Pham	<b>Art Unit</b> 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8 and 14-23 is/are rejected.
- 7) ☒ Claim(s) 5-7 and 9-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/08/08;01/04/06</u> .                                       | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**  
***Election/Restrictions***

Applicant's election without traverse of claims 1-23 in the reply filed on 09/19/08 is acknowledged.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (US pat 6410348).

With respect to claim 1, Chen et al. teach a semiconductor light emitting device having a luminous layer, comprising (see figs. 1-7 and associated text):

a light transmission layer 216 disposed over a main surface of the luminous layer 214, and having depressions on a surface facing away from the luminous layer; and

a transmission membrane 218 disposed on the light transmission layer so as to follow contours of the depressions, wherein light from the luminous layer is irradiated so as to pass through the light transmission layer and the transmission membrane.

With respect to claim 2, Chen et al. further teach a surface of the membrane facing away from the light transmission layer is substantially flat.

With respect to claim 3, Chen et al. further teach a main component of the membrane is one of polyimide, epoxy, and silicone.

With respect to claim 14, Chen et al. further teach the is a light emitting diode device.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 8, 15, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US pat 6410348).

With respect to claim 4, Chen et al. fail to teach the membrane or transmission material is made of glass.

However, the use of glass as transmission material is well-known in semiconductor art.

With respect to claim 8, Chen et al. fail to teach the range for the interval or pitch between the depressions.

However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to determine the workable or optimal value or range for the interval or pitch between the depressions through routine experimentation and optimization to obtain optimal or desired light extraction efficiency because there is no evidence indicating that the range is critical or produces any unexpected results and it has been held that it is not inventive to discover the optimum or workable ranges of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05.

With respect to claims 15, 16, and 17, Chen et al. fail to teach using the light emitting structure in a vertical cavity surface emitting laser device, a resonant cavity light emitting diode, and surface mount device, respectively.

However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to use the above light emitting structure in a vertical cavity surface emitting laser device, a resonant cavity light emitting diode, and surface mount device to improve light extraction efficiency of those devices.

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Claims 18, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US pat 6410348).

With respect to claim 18, Chen et al. teach a lighting apparatus comprising a mounting substrate, and a semiconductor light emitting device mounted on a surface of the mounting substrate, comprising (see figs. 1-7 and associated text):

the semiconductor light emitting device includes;

a luminous layer 214;

a light transmission layer 216 disposed over a main surface of the luminous layer, and having depressions on a surface facing away from the luminous layer; and

a transmission membrane 218 disposed on the light transmission layer so as to follow contours of the depressions, and

light from the luminous layer is irradiated so as to pass through the light transmission layer and the transmission membrane.

Chen et al appear to fail to teach forming a pad between the light emitting structure and the substrate.

However, the inclusion of a pad between a light emitting structure and a substrate is well-known in semiconductor art.

With respect to claim 19, Chen et al. further teach a surface of the membrane facing away from the light transmission layer is substantially flat.

With respect to claim 20, Chen et al. fail to teach the membrane or transmission material is made of glass.

However, the use of glass as transmission material is well-known in semiconductor art.

Claims 21, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US pat 6410348).

With respect to claim 21, Chen et al. teach a display apparatus comprising a mounting substrate, and a semiconductor light emitting device mounted on a surface of the mounting substrate, comprising (see figs. 1-7 and associated text):

the semiconductor light emitting device includes;

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a luminous layer 214;

a light transmission layer 216 disposed over a main surface of the luminous layer, and having depressions on a surface facing away from the luminous layer; and

a transmission membrane 218 disposed on the light transmission layer so as to follow contours of the depressions, and

light from the luminous layer is irradiated so as to pass through the light transmission layer and the transmission membrane.

Chen et al appear to fail to teach forming a pad between the light emitting structure and the substrate.

However, the inclusion of a pad between a light emitting structure and a substrate is well-known in semiconductor art.

Chen et al. appear to teach only one light emitting structure on the substrate but fail to teach a plurality of light emitting structure.

However, the formation of a plurality of light emitting structure on a substrate is well-known in semiconductor art.

With respect to claim 22, Chen et al. further teach a surface of the membrane facing away from the light transmission layer is substantially flat.

With respect to claim 23, Chen et al. fail to teach the membrane or transmission material is made of glass.

However, the use of glass as transmission material is well-known in semiconductor art.

### ***Allowable Subject Matter***

Claims 5-7 and 9-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long Pham whose telephone number is 571-272-1714. The examiner can normally be reached on Mon-Frid, 10am to 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Long Pham  
Primary Examiner  
Art Unit 2814

/Long Pham/

Primary Examiner, Art Unit 2814